



(Billing Code: 4150-31)

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office of the Secretary

Findings of Research Misconduct

AGENCY: Office of the Secretary, HHS.

ACTION: Notice.

SUMMARY: Notice is hereby given that the Office of Research Integrity (ORI) has taken final action in the following case:

Zhiyu Li, Ph.D., Mount Sinai School of Medicine: Based upon the evidence and findings of an investigation report by the Mount Sinai School of Medicine (MSSM) and additional analysis conducted by ORI in its oversight review, ORI found that Dr. Zhiyu Li, former Postdoctoral Fellow, MSSM, engaged in research misconduct in research that was supported by National Cancer Institute (NCI), National Institutes of Health (NIH), grant R21 CA120017. ORI found that falsified and/or fabricated data were included in the following published papers, submitted manuscript, poster presentation, and grant applications:

- Li, Z., Fallon, J., Mandeli, J., Wetmur, J., & Woo, S.L.C. "A Genetically Enhanced Anaerobic Bacterium for Oncopathic Therapy of Pancreatic Cancer." *JNCI* 100(19):1389-1400, October 2008 (hereafter referred to as "*JNCI* 2008") (Retracted 02/2010).

- Li, Z., Fallon, J., Mandeli, J., Wetmur, J., & Woo, S.L.C. “The Oncopathic Potency of *Clostridium perfringens* is Independent of its α -Toxin Gene.” *HGT* 20:751-758, July 2009 (hereafter referred to as “*HGT* 2009”) (Retracted 03/2010).
- Li, Z., Fallon, J., Mandeli, J., Wetmur, J., & Woo, S.L.C. “Oncopathic Bacteriotherapy with Engineered *C. perfringens* Spores is Superior and Complementary to Gemcitabine Treatment in an Orthotopic Murine Model of Pancreatic Cancer.” Submitted for publication in *Can. Res.* (hereafter referred to as the “*Can. Res.* Manuscript 2009”).
- Li, Z., Fallon, J., Mandeli, J., Wetmur, J., & Woo, S.L.C. “Oncopathic Bacteriotherapy with *Cp/plc-/sod-/PVL* is Complementary to Gemcitabine Treatment for Pancreatic Cancer in Mice.” Presented at the 12th Annual Meeting of the American Society of Gene Therapy, May 27-30, 2009.
- R21 CA120017-02
- R21 CA120017 Final Progress Report
- R01 CA130897-01
- R01 CA130897-01 A1

- R01 CA130897-01 A2
- R01 CA130897-01 A2 Supplemental Material
- R01 CA148697-01

The *JNCI* 2008 and *HGT* 2009 papers were retracted, and the *Can. Res.* Manuscript 2009 was withdrawn.

ORI found that the Respondent intentionally, knowingly, and recklessly engaged in research misconduct by falsely claiming to have generated recombinant *Clostridium perfringens* (*Cp*) strains, *Cp/sod-*, *Cp/sod-/PVL*, and *Cp/plc-/sod-/PVL*, to depict the effects of recombinant *Cp* strains on their ability to destroy cancer cells in a murine model, when these bacterial strains were not produced nor the data derived from them, and by falsifying histopathological data reported in fifty-seven (57) images in two (2) published papers, one (1) submitted manuscript, two (2) poster presentations, and seven (7) of Respondent's supervisor's grant applications and fabricating the corresponding nineteen (19) summary bar graphs that were based on those false images.

Specifically, Respondent trimmed and used portions of Figure 6 (right panel) of a draft R21 CA120017-01 grant application, representing an image of liver tumor two (2) days after injection of *Cp/plc-* bacteria, to represent unrelated results from different experiments in:

- Figures 5D and 7C (left panel), grant R21 CA120017 Final Progress Report
- Figure 6A, grant R01 CA130897-01
- Figures 9D and 17A (top left, middle, and right panels and bottom left panel), grant R01 CA130897-01 A1
- Figures 6D and 9C (left panel), grant R01 CA130897-01 A2
- Figure 2A (left, middle, and right panels) in R01 CA130897-01 A2 Supplemental Material
- Figures 4D and 7C (left panel), grant R01 CA148697-01
- Figure 4D (left panel), *JNCI* 2008
- Figure 3A (left panel), *HGT* 2009
- Figure 1A (left, middle and right panels), *Can. Res.* Manuscript 2009
- Figure labeled “Intratumoral Bacterial Titers and Quantification of Tumor Necrosis” (top left panel), *AGST* 2009 Poster presentation 2

Respondent trimmed and used portions of Figure 6C of R21 CA120017-02, representing pancreatic tumor five (5) days after injection of *Cp/sod-* bacteria, to represent results from different experiments in:

- Figures 5E, 6E and 7C (right panel), grant R21 CA120017 Final Progress Report
- Figures 9E, 10E, and 13C (right panel), grant R01 CA130897-01 A1
- Figures 6E, 7E and 9C (right panel), grant R01 CA130897-01 A2
- Figures 4E, 5E and 7C (right panel), grant R01 CA148697-01
- Figure 4D (right panel), *JNCI* 2008
- Figure 3A (middle and right panels), *HGT* 2009
- Figure labeled “Intratumoral Bacterial Titers and Quantification of Tumor Necrosis” (top right and middle panels), *AGST* 2009 Poster presentation 2

Respondent trimmed and used a portion of a figure that was reported as mouse pancreatic tumor tissue treated with control liposomes in four (4) figures (Figure 6D in R21 CA120017 Final Progress Report, Figure 10D in R01 CA130897-01 A1, Figure 7D in R01 CA130897-01 A2, and Figure 5D in R01 CA148697-01), to represent results from mouse pancreatic tumor tissue not treated with control liposomes in:

- Figures 7C (middle panel), grant R21 CA120017 Final Progress Report
- Figure 13C (left panel), grant R01 CA130897-01 A1
- Figures 9C (middle panel), grant R01 CA130897-01 A2

- Figure 7C (middle panel), grant R01 CA148697-01
- Figure 4D (middle panel), *JNCI* 2008
- Figure entitled “Oncopathic Potency of *Cp/sod-/PVL* in Tumor-bearing Mice” row C (left panel), *AGST* 2009 Poster presentation 1

Respondent falsified at least four (4) and possibly eight (8) images by using and relabeling Figures 4A (left panel), 4B (right panel), and 4B (left panel) in *JNCI* 2008 and Figure 1B (center panel) of *Cancer Res. Manuscript* 2009, to represent different experimental conditions in Figures 3C (middle panel), 3B (left panel), 3C (right panel), and 3D (left panel) in *HGT* 2009 respectively.

Respondent trimmed and used portions of Figure 4E (right panel) in *JNCI* 2008, representing pancreatic tumor from mice injected with *Cp/sod-/PVL* bacteria, to represent mice injected with *Cp/plc-/sod-/PVL* bacteria in the following:

- Figure 2, row B (right panel), R01 CA130897 01 A2 Supplemental Material
- Figure 3, row D (right panel), *HGT* 2009
- Figure entitled “Intratumoral bacterial Titers and Quantification of Tumor Necrosis” (bottom right panel), *AGST* 2009 Poster presentation 2

- Figure 1, row B (right panel), *Can. Res.* Manuscript 2009

The Respondent also fabricated the resulting quantitative data in nineteen (19) summary bar-graphs based on the false histopathological images in:

- Figure 7C, grant R21 CA120017 Final Progress Report
- Figures 13C and 17B, grant R01 CA130897-01 A1
- Figure 9C, grant R01 CA130897-01 A2
- Figure 2A-B, grant R01 CA130897-01 A2 Supplemental Material
- Figure 7C, grant R01 CA148697-01
- Figures 4A, B, D, and E, *JNCI* 2008
- Figures 3A-D, *HGT* 2009
- Figure 1C, *Can. Res.* Manuscript 2009

- Figure entitled “Oncopathic Potency of *Cp/sod-/PVL* in Tumor-bearing Mice” graph (C) in *AGST* 2009 Poster presentation 1
- Figure entitled “Intratumoral Bacterial Titers and Quantification of Tumor Necrosis” top and bottom row graphs in *AGST* 2009 Poster presentation 2

The following administrative actions have been implemented for a period of five (5) years, beginning on July 3, 2016:

- (1) Respondent is debarred from any contracting or subcontracting with any agency of the United States Government and from eligibility for, or involvement in, nonprocurement programs of the United States Government referred to as “covered transactions” pursuant to HHS’ Implementation (2 C.F.R. Part 376 *et seq*) of Office of Management and Budget (OMB) Guidelines to Agencies on Governmentwide Debarment and Suspension, 2 C.F.R. Part 180 (collectively the “Debarment Regulations”); and
- (2) Respondent is prohibited from serving in any advisory capacity to the U.S. Public Health Service (PHS) including, but not limited to, service on any PHS advisory committee, board, and/or peer review committee, or as a consultant.

FOR FURTHER INFORMATION CONTACT:

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Office of Research Integrity

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